Key words: valuation; specialised asset; goodwill; stamp duty; tax; accounting

The valuation of specialised operational assets – unbundling enterprise and asset value

The measurement of goodwill is not a precise science and valuation professionals continue to have difficulty in making a clear distinction between enterprise and asset values. This paper explores this important distinction, as valuations completed for acquisition accounting, tax and stamp duty purposes are all affected by these considerations, and a number of high-profile stamp duty cases have arisen where these issues have been in dispute.[1]

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Valuation framework

Before any valuation can be completed, it is necessary to determine what valuation definition is to be applied and the purpose of the valuation. Confusion can arise where inconsistent measurement bases are applied. To the extent that values of different assets or asset classes are required for a common purpose, it is vital that values are determined on a consistent basis. Inconsistencies in value measurement can arise as a result of arbitrary accounting and tax rules (e.g. depreciation).

Having established the framework and appropriate measurement basis, a properly constructed valuation of any business or asset will consider and adopt one or more of the following three broad approaches to value:

- market or sales comparison approach;
- income approach (including discounted cash flow and capitalisation of income); and
- cost approach (more fully known as depreciated replacement cost).

None of these approaches is conceptually more robust than any other. The nature of the asset and the availability of information will typically dictate which approach, or approaches, is appropriate.

Asset clarified

Confusion can arise from the generic use of the term 'asset'. The term 'asset' can be used to refer to a security. The same term can be used with reference to an operating business or enterprise. The term 'asset' can also be used in relation to the individual tangible and intangible assets of a business enterprise which, among other things, may include cash, customer receivables, inventories, buildings, plant and equipment, land and goodwill. For accounting purposes, the term has a defined meaning, however, when used by a member of the public in a generic sense, the same term may have a variety of different interpretations based on that person's experience. For the purpose of this discussion, the term 'asset' is intended to mean the individual tangible and intangible assets of a business enterprise.

A distinction may be required between the value of the business enterprise and the value of each of the individual assets used by that enterprise in the generation of its cash flows. For a variety of purposes, including tax consolidation, capital gains tax and stamp duty, it is necessary to place separate values on the various assets of a business enterprise.

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These may include:

- cash;
- receivables;
- spares;
- stockpiles;
- land;
- buildings;
- plant and equipment;
- financial instruments;
- brand names and trade marks;
- contracts;
- intangible and intellectual property assets; and
- goodwill.

Where the market value of these assets can be readily identified from the marketplace (i.e. by the market or sales comparison approach), the separation of values is relatively simple. It is only when the underlying tangible assets fall into the category of 'specialised property' that the distinction between tangible assets, intangible assets and the business enterprise as a whole becomes less obvious. Specialised property is defined as a property (or asset) 'that is rarely, if ever, sold in the market except by way of a sale of the business or entity of which it is part, due to uniqueness arising from its specialised nature and design, its configuration, size, location, or otherwise' (International Valuation Standards Council 2007).

In those circumstances, there may be few or perhaps no comparable sales of the underlying buildings, plant and equipment assets separate from the business in occupation. However, the fact that the market value of the specialised buildings, plant and equipment cannot be observed using the market or sales comparison approach, does not of itself, mean that a market value cannot be determined.

In placing values on the assets (in the broadest sense of the word) of a business enterprise, the sum of the market values of the assets and liabilities should theoretically equate to the value of the business enterprise as a whole. The common approach adopted by valuers is to place market values on the individual tangible and intangible assets of the business enterprise, and allocate the residual premium (to the extent that the market value of the business enterprise exceeds the market value of the identified tangible and intangible assets and liabilities) to goodwill.

Valuation approach selection – practical considerations

Separation of cash flows

Discounted cash flow methods are most commonly used in the valuation of a business, however, when it becomes necessary to determine the value of the individual assets used to generate those cash flows, valuers typically consider that either a market comparison or cost approach should be applied. This is because income-based valuation approaches, such as the discounted cash flow and earnings multiples approaches, value by default all assets, both tangible and intangible.

This point can be illustrated by considering a simple example. Consider two identical machines, readily available in the market, each owned and operated by a different owner. Each machine has the capacity to produce an identical product at the same rate and cost. However, Owner A has negotiated a favourable contract product sale price from which he will derive an income stream of x. Owner B has also negotiated a contract product sale price for a similar period but on less favourable terms.

The net present value of the two income streams is quite different. Sales of comparable machines separate from the business in occupation are readily observable and are consistently less than the net present value of the cash flows of Owner A and Owner B. Is the machine owned by Owner A more valuable than that owned by Owner B? The *business* of Owner A is more valuable, however, the additional value is in respect of an intangible asset, most likely the supply contract, goodwill or both.

The logic of this argument is generally self-evident where the market value of the assets used to derive the income stream is readily identifiable from the marketplace. However, transactions involving the sale of specialised assets are relatively infrequent and, when they do occur, the property, plant and equipment are sold as part of a going concern business. In such situations, the individual values attributable to the property, plant and equipment are typically not disclosed to the marketplace.

The need for componentisation

While specialised assets are typically used to produce income, the income that is produced is consolidated in the overall business enterprise income and, as such, is produced by a combination of property, plant and equipment, and intangible assets, functioning together as an integrated going concern business.

From a practical perspective, the unit of account for most types of property, plant and equipment is typically quite disaggregated, reflecting unit of property concepts

adopted as part of a company's tax and accounting policies. As a result, property, plant and equipment assets commonly comprise numerous individual assets for which separate values must be determined. Adopting a discounted cash flow approach to valuing plant and equipment would therefore require allocation of the cash flows to individual assets. Having regard to the numerous and varied assets making up many business operations this is typically not feasible.

Comparison of income and cost approaches

Recognising the risk that any carve-up and allocation of the cash flows of a business enterprise to individual categories of tangible and intangible assets would likely be somewhat arbitrary, valuers typically adopt the cost approach where the market approach cannot be applied.

Further, because of the difficulty of allocating cash flows on a reliable basis to the underlying assets, and because any such allocation may include elements of value attributable to intangible assets and goodwill, valuers typically conclude that the income approach is an inappropriate approach to be applied to the valuation of specialised buildings, plant and equipment.

However, it is recognised that the value of specialised buildings, plant and equipment is linked to the value of the business enterprise or cash generating unit to which the assets belong. The connection between cash flows and the underlying assets is therefore clear. But equally clear are the practical challenges in adopting an income approach as a primary valuation approach to valuing specialised buildings, plant and equipment. This is due to the difficulty of identifying income streams that can be attributed on a reliable basis to individual assets without including elements of value relating to goodwill and intangibles.

All valuation methods require the valuer to exercise professional judgement. Discounted cash flow methods require careful judgement to reliably estimate and reflect things such as growth rates, discount rates, capital structure, terminal values, forecast FX and forward prices. Likewise, the cost approach requires careful judgement in respect of the elements of cost, direct and indirect costs, total and remaining effective lives, depreciation methods, obsolescence and residual values.

Cost approach examined

The cost approach is considered to be an appropriate valuation approach to value specialised buildings, plant and equipment by numerous regulatory and other government bodies including:

- Australian Taxation Office;
- Australian Competition and Consumer Commission;
- State and Territory regulators; and
- Australian Accounting Standards Board.

Both the Australian Valuation and Property Standards Board and the International Valuation Standards Council have addressed the issue of valuing 'specialised property'. For specialised buildings, plant and equipment, the guidelines provide for the use of the cost approach for those tangible assets where the market value cannot be observed from the marketplace (International Valuation Standards Council, 2007).

If applied appropriately, the cost approach is capable of producing an accurate indication of value. A cost approach typically considers the assets at an individual item level and therefore provides significantly greater granularity than that afforded by macro valuation techniques, which consider the operation as a whole.

The cost approach is based on the concept of substitution. Potential purchasers assessing what they might be prepared to pay for the underlying property, plant and equipment assets, may consider, as an alternative to acquiring the subject assets, what it would cost them to construct a similar group of assets having the same functionality as these assets. This represents the maximum that a potential purchaser would be prepared to pay for the buildings, plant and equipment if they were new at the date of valuation. To the extent that the subject assets are not new, adjustments are made to reflect the impact of obsolescence on value.

If applied appropriately, the cost approach is capable of producing an accurate indication of value. A cost approach typically considers the assets at an individual item level and therefore provides significantly greater granularity than that afforded by macro valuation techniques, which consider the operation as a whole. Many business enterprises comprise numerous assets, the value of each of which is affected differently by factors such as age, level of usage and obsolescence. While it is sometimes possible to develop indications of value using macro valuation techniques, these are more commonly adopted as check methods.

Although the methodology uses current costs as an input into the valuation calculation, this and other inputs should all be market based or related and, if applied correctly, should be identified as a market valuation concept.

Assessing replacement costs

Replacement cost is the current cost of a similar new asset having the nearest equivalent utility as the asset being appraised. Reproduction cost is the current cost of reproducing a new replica of the asset being appraised using the same, or closely similar, materials (American Society of Appraisers 2000). In the context of a cost approach valuation, the valuer adopts the lower of replacement or reproduction cost as this represents the potential purchaser's lowest alternative cost.

Optimisation is a term often used to describe the process of reducing a reproduction cost to a replacement cost. The concept of optimisation is one given some prominence in valuations of monopoly assets for regulatory pricing purposes, however, this process forms part of any properly applied cost approach valuation.

The historical cost of an asset is largely irrelevant as a measure of market value. However, in appropriate circumstances, as part of a properly applied cost approach, historical costs, adjusted to reflect the impact of price movements over time, can provide an appropriate indication of replacement cost (or reproduction cost if different). This is particularly so for minor assets and recently constructed assets. This can also serve as a further check against replacement costs derived using a direct approach.

In respect of the assessment of replacement costs, it is important that the replacement costs adopted fully capture all of the costs that would be incurred today by someone seeking to construct a similar facility. These costs can be broadly described as follows:

- direct costs (e.g. labour, materials);
- engineering, procurement and construction management ('EPCM') costs; and
- owner's costs (e.g. interest during construction, in-house design, project management).

A properly constructed replacement cost captures, for each asset identified, direct and indirect costs associated with the creation of that asset. Each asset attracts an appropriate proportion of indirect costs, such as EPCM, interest during construction and other owner's costs.

Depreciation as a valuation tool

As applied for tax or accounting purposes, depreciation is effectively only an arbitrary means by which the cost of an asset is allocated over a number of periods. However, valuers are concerned with economic depreciation. As part of the cost approach, valuers use depreciation as a tool to measure the impact of the various forms of obsolescence on value.

In this regard there are three forms of obsolescence that are typically considered:

1. ***Physical deterioration.*** This is the loss in value resulting from the consumption of the useful life or service potential of the asset caused by wear and tear, deterioration, exposure to various elements, physical stresses and similar factors. The consumption of the useful life or service potential of an asset may be constant over the life of an asset or this may occur more quickly at the beginning or at the end of the asset's life. The useful life of an asset may be expressed in terms of years of service but may also be expressed in terms of units of production.
2. ***Functional obsolescence*** (sometimes called technological obsolescence) is the loss in value resulting from inefficiencies in the subject asset compared to a more efficient or less costly asset. Such excess operating costs and/or excess capital costs can be used to measure the extent of functional obsolescence.
3. ***Economic obsolescence*** (sometimes called external obsolescence) is the loss in value caused by factors that are external to the asset itself. Such factors often relate to the economics of the industry in which the business operates or the business in which it is employed. New legislation (or fear/risks of it) may also contribute to economic obsolescence.

Valuers will consider and adopt various depreciation methods having regard to the above factors. The depreciation methods considered typically include straight-line, diminishing value, direct market comparison and units-of-production profiles.

Straight-line depreciation is typically used for structural and infrastructure type assets, where only physical obsolescence is considered to have an impact on value.

Diminishing value depreciation is typically used for assets that diminish in value due to two or more obsolescence factors. Valuers should always endeavour to adopt depreciation profiles that reflect typical market behaviour having regard to the appropriate life and residual value. Diminishing value depreciation is often very comparable to market-derived depreciation profiles.

Market-derived depreciation profiles can be determined from a regression analysis of market sales prices compared to replacement costs and, by default, they capture the impact of all forms of obsolescence.

For some assets a units of production-based depreciation method may provide a better measure. This commonly applies when:

- the pattern of consumption of service potential is irregular over the life of the asset; and
- depreciation is calculated at a whole-of-plant or facility level.

This method has some limitations because, as noted earlier, values are typically required at the individual plant item level. It is not always possible to measure units of production at this level. This is because each different type of equipment is replaced on a cycle that reflects the rate at which that item deteriorates over time, having regard to various factors such as intensity of use and maintenance practices. While it might be possible to calculate depreciation at a whole-of-facility level, to do so would ignore the complexity of a complicated process plant that has developed and expanded over time and comprises a multitude of individual assets, each with different value drivers, ages and life cycles.

It is also often problematic to assess the total life of individual assets (and complete facilities) measured in terms of units of production and, therefore, while it may be possible to determine the numerator to be applied (for example, in respect of a ball mill, the quantity of material milled since construction), the denominator (the total quantity of material that will be milled in the entire life of the ball mill) is more likely to be unknown. There are also difficulties in applying a units-of-production method in respect of assets such as buildings, site improvements and non-production (service and support) assets.

Goodwill

Goodwill is variously defined as:

- the future benefits from unidentifiable assets (Australian Accounting Standards Board 1996);
- an intangible, saleable asset arising from the reputation of a business and its relationships with its customers (Australian Property Institute and Property Council of Australia 2000); and
- at its simplest level, goodwill is calculated as the difference between the value of the entity as a whole and the value of its net tangible assets (Lonergan 2003).

The existence or otherwise of goodwill in a business enterprise is often a contentious point in completing valuations such as those contemplated in this paper. Arguments are sometimes advanced that suggest that it must be self-evident that goodwill cannot exist in a particular business enterprise and therefore any excess enterprise value should be attributed to the underlying assets. Such arguments may be driven by a desire to deny the existence of goodwill in a transaction. It is also worth noting that tax, accounting and other rules can be proscriptive and, when applied, can give rise to different valuation outcomes.

Goodwill is a type of intangible business asset. It is most commonly defined as the difference between the value of a company's assets (less its liabilities) and the market price or asking price for the overall company. In other words, goodwill is the amount in excess of the value of a company's assets and liabilities that a purchaser would be willing to pay to acquire it. There are many things that may give a particular company a dominant market position for which another company is willing to pay a premium. This ability to command a premium price for a business is the result of goodwill.

Figure 1 provides an overview of some of the components that can make up goodwill in a business.

Goodwill is a type of intangible business asset. It is most commonly defined as the difference between the value of a company's assets (less its liabilities) and the market price or asking price for the overall company. In other words, goodwill is the amount in excess of the value of a company's assets and liabilities that a purchaser would be willing to pay to acquire it.

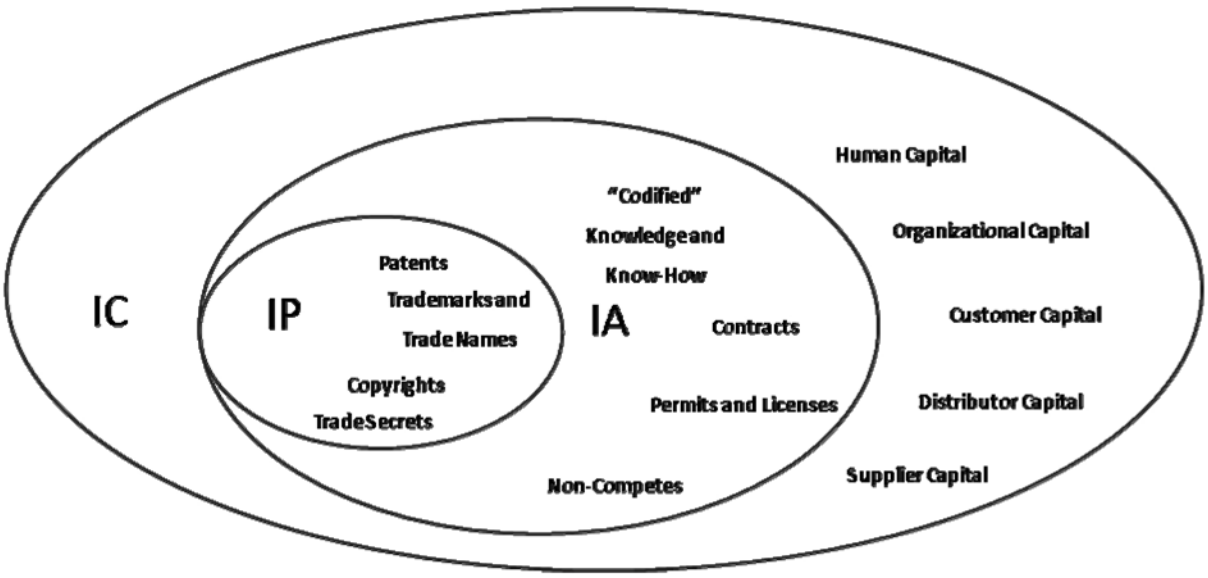
These can be grouped into three broad categories:

- intellectual capital (IC);
- intangible assets (IA); and
- intellectual property (IP).

An operating business may own and use a number of these, some of which may be specifically identifiable, such as contracts, brand names, trademarks, patents and licensing agreements that can be assigned a value. The remaining intangibles, which may include the business's reputation, unique market position, knowledge, good location, skills or operating methods are usually bundled up into the category of goodwill.

Although the factors that contribute to goodwill do not necessarily have a separately identifiable and measurable value, they nonetheless add to the overall value of the business by persuading the purchaser that the company will be able to generate higher future earnings than a business that does not have those advantages.

FIGURE 1: **Key components of the goodwill of a business**



In utilities, oil and gas, chemical processing, mining and minerals processing operations this could be as broad as knowing how to operate a complex process plant and business. This form of intellectual capital captures what might be termed the 'corporate memory'. This embraces all of those experiences and knowledge gained by operating a business that cannot be specifically identified and measured reliably other than as part of the enterprise as a whole yet, without which, the tangible assets may be so much scrap metal, suggesting goodwill may be a substantial component of value in such businesses. Goodwill can also arise where practical knowledge gained from operating the assets over time allows the owner to obtain output above the design capacity of the assets.

Goodwill may be a manifestation of optionality. This might be the potential to derive greater profits from the enterprise by increasing capacity, varying the product mix or other similar strategies. It would be inappropriate to attach such value to the existing tangible assets to the extent that realisation of those increased profits required capital expenditure, the creation of new assets and/or the modification of existing assets.

In the case of a complex process plant, there may be a significant time period required to construct the assets, including feasibility, planning, design, construction and commissioning periods. The benefit of gaining immediate access to revenues by acquiring an existing operating asset (or by avoiding the delay in earning revenues) would typically manifest itself in the goodwill component of a business enterprise.

In reality it can probably be argued that most profitable business enterprises conceptually have some component of goodwill as part of the overall enterprise value.

Conclusions

Most of the time, the separation of value between the component parts of a business enterprise is a matter of small concern. However, in certain situations it is critical.

The valuation of specialised operating assets is a complex process. The connection between the business enterprise and its assets is clear. Separation of value is often not. However, valuers have a duty to apply commonly accepted valuation methodologies and to do so in an objective and impartial manner. Perhaps more than anything, however, a valuer has a duty to apply common sense and should constantly perform cross-checks to ensure that valuations are realistic.

Clearly, purchasers of businesses are most concerned about the future cash flows they will derive from the acquisition of that business and, therefore, they measure enterprise value most commonly having regard to discounted cash flow or other income-based methods. Due to the problematic nature of reliably separating cash flows it is often inappropriate to use the income approach to determine the value of the underlying physical assets that is used to generate those cash flows.

Much has been written on the nature and measurement of goodwill. It is not a precise science. For instance, a legal definition of goodwill may result in a finding that the business has goodwill but an accounting definition may result in the goodwill having no value. Whether a business enterprise incorporates an element of goodwill is a question of fact but it is much easier to identify this in the abstract than to measure it empirically.

Note

1 This article provides general information, does not constitute advice and should not be relied on as such. Professional advice should be sought prior to any action being taken in reliance on any of the information. Liability limited by a scheme approved under Professional Standards Legislation.

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